

WHAT IS CLAIMED IS:

1-20. (Canceled)

21. (New) An exposure apparatus for exposing a substrate with a pattern of an original, said apparatus comprising:

a projection optical system for projecting the pattern of the original onto the substrate with light from a light source; and

an interferometer for measuring an optical characteristic of said projection optical system by use of the light from said light source which passes a pinhole and said projection optical system,

wherein the pinhole has a diameter which is smaller than a diameter of an Airy disc.

22. (New) An apparatus according to claim 21, wherein the diameter of the pinhole is about a half of the diameter of the Airy disc of the light from said light source.

23. (New) An apparatus according to claim 21, wherein the optical characteristic is wavefront aberration.

24. (New) An apparatus according to claim 21, wherein said interferometer is a Fizeau interferometer.

25. (New) An exposure apparatus for exposing a substrate with a pattern of an original, said apparatus comprising:

a projection optical system for projecting the pattern of the original onto the substrate with light from a light source; and

a photosensitive element for detecting light from said light source which has passed a pinhole and said projection optical system as an interference signal,

wherein the pinhole has a diameter which is smaller than a diameter of an Airy disc.

26. (New) A device manufacturing method, comprising the steps of:

exposing a substrate with a pattern of an original by user of an exposure apparatus; and

developing the exposed substrate,

wherein the exposure apparatus includes (i) a projection optical system for projecting the pattern of the original onto the substrate with light from a light source, and (ii) an interferometer for measuring an optical characteristic of the projection optical system by use of the light from the light source which passes a pinhole and the projection optical system, and wherein the pinhole has a diameter which is smaller than a diameter of an Airy disc.